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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Bernhard Mattes

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EXAMINER

PIPALA, EDWARD J

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

01/20/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/534,107	Applicant(s) MATTES ET AL.	
	Examiner EDWARD PIPALA	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to Applicant's amendments and remarks of 9/4/09.
The previous rejection under 35 U.S.C. 112 2nd has been withdrawn.
Claims 17-38 are presently pending.

Claim Objections

2. Claim 35 is objected to because of the following informalities: in line 4 it is believed that "beam" should have been "being", otherwise there is no proper antecedent basis for "the at least one rotational vector beam". Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 17-21, 27-31, 34 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Arai (US Pat. 6,813,370 B1).

Arai teaches a lane recognition apparatus which makes use of a pair of stereo images of a scene in front of the vehicle in front of the vehicle obtained from a stereoscopic camera for calculating the distance information, in this instance to roadway lane markings (from the abstract). Figure 1 shows the stereoscopic camera (1), stereo processing (6), solid object

Art Unit: 3663

recognition (11), as well as actuator systems 13, 14, 15, vehicle behavior control section 16, 17 and 18. The background of the invention discloses monitoring vehicle surroundings and recognizing road configurations, where the summary of the invention near the bottom of col. 1 teaches lane recognition as well as recognizing the position of lane markers in real space using distance information derived from a pair of picture images. In col. 7, line 13 Arai teaches consideration of behaviors of the vehicle, including forward and backward movements as well as pitching and the like. Beginning in col. 11, lines 10+ Arai particularly discusses the use of parallax and relates pixels in determining distance data, including identifying the (x, y, z) coordinates of a point in real space, where x denotes a position along the widthwise direction of the vehicle, y denotes a position in the vertical (height) direction of the vehicle, and z denotes a position in the longitudinal direction of the vehicle (a distance in front of the vehicle). Col. 11, line 50+ also teaches consideration of the roll angle of the own vehicle or a bank angle of the road (as part of a road height model, and is further discussed in col. 13, line 41+).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-26, 32, 33, 35, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US Pat. 6,813,370 B1) in view of Hart, Jr. Et al. (US Pat. 6,130,706).

Arai teaches the use of a stereoscopic camera to determine image information (distance and location) of surroundings of a vehicle and control of vehicle dynamics through the use of at least one vehicle actuator, but does not provide for measuring a value of at least one of a rotational vector and a motion vector of the motor vehicle, nor determining at least one of a yaw rate, yaw angle and a lateral acceleration.

Hart, Jr. et al. teaches a process for determining vehicle dynamics, including determining the slip angle of a vehicle, which is analogous to the converse of determining a vehicle's yaw angle, by optically monitoring movement in one or more of the camera images of the road surface as the vehicle passes over it (from the abstract), and as shown in figure 2B, and further discussed in the middle and bottom portions of col. 1.

Accordingly, it would have been obvious to one of ordinary skill in the art to have incorporated the teachings of Hart, Jr et al. with respect to sensing or determining vehicle parameters relating to yaw and lateral acceleration, within the context of the lane marker recognition system of Arai, in order to determine not only relative positioning of the vehicle with respect to lane markers but also determine vehicle attitude through yaw and lateral acceleration detection, for more complete and effective implementation of a vehicle dynamics actuator used with any of systems 13, 14, 15, 16 and 17 of Arai.

Response to Arguments

5. Applicant's arguments with respect to claims 17-38 have been considered but are moot in view of the new ground(s) of rejection and since the previous rejection under 35 U.S.C. 112 2nd has been withdrawn by the Examiner.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWARD PIPALA whose telephone number is (571) 272-1360. The examiner can normally be reached on M-F 9:30 - 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edward Pipala/
Examiner, Art Unit 3663